

CLAIMS

- Sub B1
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1. A method of enhancing the transcription of a gene in a DNA construct incorporated into the genome of a eucaryotic host cell, said DNA construct comprising a structural gene for a desired protein or polypeptide and a gene promoter upstream of the structural gene, ~~characterized by~~ ^{the method comprising} providing upstream of said promoter at least one enhancer element comprising the nucleotide sequence TTC TGA GAA, and exposing the DNA construct to lactogenic stimuli.
2. The method according to claim 1, ~~characterized~~ ^{the method comprising} in that said enhancer element is the SPI-growth hormone responsive element (SPI-GHRE) or a derivative thereof.
3. Use of an enhancer element comprising the nucleotide sequence TTC TGA GAA in an expression vector to be used in a non-human mammal for the production of recombinant proteins or polypeptides in milk.
4. ~~The use~~ ^{method} according to claim 3, wherein said enhancer element comprises a single or multimeric copies of the SPI-growth hormone responsive element (SPI-GHRE) or a derivative thereof.
- Sub D3
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5. An enhancer element which when used in a DNA construct for transfection of a eucaryotic host cell is responsive to hormonal stimuli, ~~characterized in that~~ said enhancer element ~~comprises~~ ^{comprising} the nucleotide sequence TTC TGA GAA, with the proviso that said nucleotide sequence is not the DNA sequence of the SPI-growth hormone responsive element (SPI-GHRE).
- Sub A3
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6. The enhancer element of claim 5, characterized in that it is responsive to both somatic and lactogenic stimuli.

7. The enhancer element of claim 5 or 6, characterized in that it is responsive to signals generated from both growth hormone and prolactine receptors.

Sub D4 }
8. An expression vector comprising a structural gene encoding a desired protein or polypeptide and a promoter, characterized in that the vector further comprises at least one enhancer element including the nucleotide sequence TTC TGA GAA, with the exception of the SPI-growth hormone responsive element (SPI-GHRE).

Sub B3 }
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9. An expression vector comprising a structural gene encoding a desired protein and a mammary tissue specific promoter, ~~characterized in that it~~ ^{wherein the vector} further comprises at least one enhancer element including the nucleotide sequence TTC TGA GAA.

10. The expression vector according to claim 9, ~~characterized in that~~ ^{wherein} said enhancer element comprises a single or multimeric copies of the SPI-growth hormone responsive element (SPI-GHRE) or a derivative thereof.

a Sub B3 }
11. A eucaryotic host cell containing the expression vector according to claim 8, ~~9 or 10.~~

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12. A transgenic non-human mammal having incorporated into its genome a DNA construct comprising a structural gene encoding a desired protein or polypeptide linked to a control sequence for expression in milk-secreting epithelial cells of the mammary gland so that the protein or polypeptide is secreted into the milk, ~~characterized in that~~ ^{wherein} said DNA construct further comprises at least one enhancer element which includes the nucleotide sequence TTC TGA GAA and is responsive to signals generated from prolactine receptors.

Sub 14
13. The transgenic non-human mammal according to claim 12, characterized in that it is selected from mouse, pig, goat, sheep and cow.

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14. A method for producing a recombinant protein or polypeptide, ^{comprising} ~~characterized by~~ providing a transgenic non-human mammal according to claim 12 ~~or 13~~, and recovering the protein or polypeptide from the milk produced by the mammal.

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